

**Tax Analysis and Revenue Forecasting Course**

**Sigma One Corporation Accra**

**November 2001 to February 2002**

**February 2002**



**Sigma One Corporation**

**Tax Analysis and Revenue Forecasting Course**

**Sigma One Corporation Accra  
November 2001 to February 2002**

**Submitted to:**

**U.S. Agency for International Development  
Mission to Ghana**

**for:**

**Trade and Investment Reform Program (TIRP)  
Improved Policy Reform and Financial Intermediation  
USAID Contract Number: 641-C-00-98-00229**

**by:**

**Duke University**

**For**

**Sigma One Corporation**

**In fulfillment of the following milestones:**

**6.3 (Y4)      One Seminar held in Ghana per year**

**February 2002**

**Sigma One Corporation**

## **Tax Revenue Forecasting Course**

**November 2001 – February 2002**

**Accra, Ghana**

### **REPORT ON THE FIRST PHASE OF TRAINING PROGRAM IN GHANA**

The main purpose of phase I of the program was to equip the participants with the theoretical foundations for analyzing tax systems and to introduce revenue-forecasting models. During the course of the program, a variety of taxes and related policy issues for value-added taxes, excises, trade taxes, personal income tax, corporate income tax and wealth tax were covered. Also, a preliminary introduction to the revenue forecasting models for all these taxes was made. The program ended with a self-evaluation by the participants on the program content to enable them to gauge the progress made in appreciation of the various issues involved in tax analysis. It is a matter of satisfaction that all the participants performed well, and it would be fair to infer that they have developed a sound understanding of the materials.

The level of participation and the quality of discussions in the classroom and during the case study sessions was simply outstanding. The participants have been very enthusiastic and fully engaged throughout the two weeks. Also, a high degree of computer literacy among the participants was very helpful in delivery of the program.

During the last three days of the program, the participants were systematically assigned tasks for preparing for Phase II of the program. The participants were divided into six groups of two each and one group of three. They were asked to indicate their preference for the forecasting model that they would like to work on. It turns out that the participants will like to complete one major forecasting exercise as their main project, but they would also like to do a second forecasting exercise so that their benefits are maximized. This is doable although it will mean extra efforts on the part of both the participants and the faculty. The participants have been given detailed oral and written guidelines on how to collect data and input the same for their respective models. We are looking forward to a rewarding second phase of the program. It is expected that at the end of the program, the participants should be able to complete on their own forecasting exercises for Ghana tax revenues. They will also develop a keener and deeper appreciation of any gaps in the tax data, which is currently available for tax forecasting. This will allow them to direct improvements in tax data collection and models in the future.

## **REPORT ON THE SECOND PHASE OF TRAINING PROGRAM IN GHANA**

(January 21 – February 1, 2002)

The phase II of the program focused on the forecasting exercise. At the end of phase I in December, the participants had been divided into seven groups and were assigned preparatory work for Phase II. Their main task was collection of data and inputting the same for the tax models they had chosen for forecasting.

The second phase started with a review of data already collected and identification of the gaps that remained in data. Since the forecasting exercise was to commence on the fourth day of the program, the participants were asked to use some of their initial time in supplementing the shortcomings. The members of the faculty, along with the two participants from income tax department, visited a district office of income tax and found that it would be better to use the district data for forecasting income tax revenues and prepare a model that could be used by other districts as well as the internal revenue department as a whole. Another team comprising of the faculty, representatives of Sigma One and the Revenue Board met with the director of department of statistics (DOS) and his officers to discuss the availability of data for the forecasting exercise as well as the modeling work in future. It turned out that the DOS has a Public Finance department that has a great deal of unpublished data. It remained unpublished because there was no demand for data. It was agreed that the officers from the revenue board and DOS would coordinate the requirement and collection of data in the future.

The first three and a half days were devoted to an intensive review of the forecasting models along with country cases that showed how the models were to be applied. The remaining days, including the Saturday was spent on the actual forecasting exercise. Two of the groups re-organized and did another model on trade taxes. The faculty worked virtually one on one with the eight teams and completed the following models:

- Group I – GDP based totals domestic revenue and VAT revenue forecast,
- Group II – GDP based corporate income tax model and monthly forecast model
- Group III – Excise tax model - beer
- Group IV – GDP based trade tax model
- Group V – Input-output VAT model
- Group VI – Personal income tax micro-simulation model
- Group VII – Excise tax model - Petroleum
- Group VIII – Harmonized code trade tax model.

The models and their results turned out to be quite realistic and of a high quality. Also by the end of the program, there was a great degree of cooperation among the various tax departments in terms of data and information sharing. When the program started, every department was very conscious of the privacy and confidentiality of their data. During the two-week exercise, it became clear that a great deal of sharing of information was feasible even within the framework of existing rules and regulation on privacy and confidentiality.

On the last day of the program, a presentation of the models and their results was made. This was attended by senior members of the Finance Ministry, Revenue Board and the three tax departments. The presentations were well received and highly appreciated.

The participants raised the issue of how to continue this work in future and maintain a close liaison among the various agencies. The general consensus among the senior officials and representatives of the ministry, the revenue board and the tax departments was that the three tax departments and the Ministry of Finance would aim at preparing the next budget based on actual forecast of revenues using these models rather than starting from the expenditure side and then making a budget. It was agreed that the Ministry of Finance would indicate a date by which this exercise was to be completed by the three tax departments, the revenue board and the Ministry itself so that the work could proceed in a time bound fashion.

The program came to a close with distribution of certificates to the participants for successful completion of the program.